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OPTICAL LOW-PASS FILTER, OPTICAL SYSTEM, AND IMAGE PICKUP DEVICE

Abstract:

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PROBLEM TO BE SOLVED: To provide an optical low-pass filter by which the sufficient contrast of a subject image can be obtained while completely restraining the occurrence of a moire and which is arranged in narrow installation space. SOLUTION: In this low-pass filter 3, a functional film 32 consisting of a monolayer or multilayer film having a function for reflecting or absorbing near infrared light is formed on either surface of transparent base substance 31 consisting of a glass plate or a resin plate or the like, and a phase grating 33 is formed on the other surface thereof. In the filter 3, various parameters such as the grating height h(x) and the grating cycle F of the grating 33 and a distance D between an image formation surface 41a on a solid-state image pickup device 41 and the grating 33 are properly adjusted, and cutoff frequency in MTF characteristic by the filter 3 by itself is larger than Nyquist frequency decided by the pixel pitch of the device 41.